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Library Analytics: Shaping the Future-How Analytics Helped Smith College Discover the Best Bento

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We have already started thinking about how we can abandon our current usage statistics project in favor of an overarching ERM project board that will incorporate the process of managing our usage statistics. We are also currently working on mapping the principles of the agile management philosophy to industry standards and the libraries strategic plan, and looking for a way we can use this information to measure the value of the work that we do.

There are many web-based agile management tools freely available or by subscription that libraries can use to augment their current systems. We tested a few and found one that best fit our needs, but they all appear to be scalable to any size library or project that requires that work be completed in a single piece flow, where changes need to be made at any time, and where there is a high degree of variability in the work. Projects are not limited to the number of columns in the Kanban board, or the number of cards that you add. Careful analysis, however, of the project should be done to determine whether Kanban is the right project management tool to employ in each case. We are currently exploring other methods of project management to determine whether we should use them in replacement of our Kanban boards, in conjunction with them, or whether they are conducive to managing our work in a smarter way.

The agile management tool we are using allows us to see a visual representation of the projects in terms of incomplete and complete tasks so we can keep track of our progress as due dates draw near, which is not something that we can do using task management features built into our ILS. Using an agile management tool, you can quickly determine if the work of the unit is not in balance or whether a project is not making adequate progress toward its goals. This type of analytics promises to be a valuable tool to inform administration and other units and departments in the library of the work that we are doing.

In a way, all knowledge workers to some extent are project managers, and the general nature of managing the electronic resources life cycle seems to be quite conducive to the incorporation of agile management practices in many of our workflows.

Although not all of our agile projects can be considered successes, we consider our usage statistics project and the use of the agile management tool in general to be successful. We have learned a great deal about project management through both the successes and failures we have experienced while using Kanban. Our agile management tool has helped us streamline many of our workflows, has given us the opportunity to learn new skills, transformed us into a team, helped us equitably distribute mundane but essential work, and has saved us valuable time to better manage electronic resources.

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Library Analytics: Shaping the Future — How Analytics Helped Smith College Discover the Best Bento

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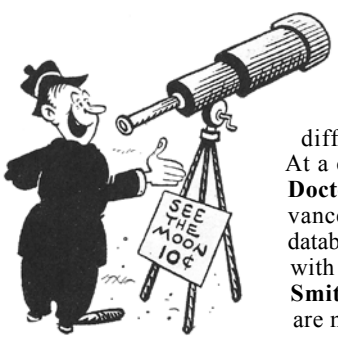
In this month's column, we're featuring a project that leveraged analytics around user behavior to inform design decisions around Library Discovery. This column builds on a presentation and previous efforts by **Rob O'Connell**, Director of Discovery & Access, at the **Smith College Libraries** to use analytics to help inform their library website redesign and ultimately led to the adoption of a Bento Box style implementation of **EBSCO Discovery Service (EDS)**.

The genesis of the project began with observations of patron confusion caused by the previous implementation of the **EDS** interface. Librarians reviewing usage logs of **EDS** saw that most searches were for known-items and that these specific searches were about the students learning how to interact with the materials available. Librarians were regularly incorporating the discovery tool into their instruction sessions but noticed that while students were doing more complex searching during class sessions, they'd go back to simple, familiar keyword searching when working on their own. **O'Connell** believes that one reason for the high level of known-item and general topic searches was that **Smith** was marketing its discovery services to first- and second-year students and other novice searchers. He said the high incidence of known-item searching might differ from other institutions. At a comprehensive or **Carnegie Doctoral 1** institution, more advanced students might be more database-focused which correlates with some of the observations at **Smith** where graduate students are more database driven.



At **Smith**, they've seen user research behaviors indicating that many students start their research with-known-item web searching and then move their initial search results into the discovery service. This adds up to the fact that, at least for discovery, there is no "one size fits all" and local mitigation of the interface that works best for each site is important. In 2016, **Smith** started a rebuild of the library website and had decided upon a bento box approach after seeing a presentation by librarians from the **University of Alabama** at a user group meeting. **Smith's** goals were to build out a bento box approach using modern web design based on the extensive Google Material Design framework (*https://material.io/guidelines/*) that outlines how to rebuild for the modern web (e.g., motion, dynamic web). The initial redesign was first vetted by librarians, who when first seeing the skeleton were excited about the possibilities of the bento box. Together, the librarians of

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Smith decided to use evidence-based decisions to inform further redesign. They had questions centered on the user perspective, such as "Where do the troubles lie?" and "Is there too much information on the screen?"

Smith developed a cross-department user research team of five staffers that included two librarians from collection services, two teaching librarians, and one programmer from Digital Strategies & Services. This makeup ensured that the team members could evaluate the bento box approach from different angles by various people with different sets of knowledge. Initial usability testing focused on screen wording and display elements (e.g., how would you filter these results?) with the ultimate goal being to learn if their students understood what's being searched and how to manage the information on screen to optimize their search experience.

Testing of the initial bento box design focused on discovery by categories, common to bento box designs in other libraries — books, articles, and LibGuides — to determine which of these categories **Smith** users found helpful. One surprising result was how poorly LibGuides tested with students: of all students tested, not one could explain what LibGuides were. Librarians at **Smith** immediately recognized that if students didn't understand why they were seeing something in the search results, they wouldn't click on it making it nonessential to the overall design.

Another change made through observation related to databases. Testing showed that students had difficulty associating database names with their subject areas. Common databases, such as **JSTOR** were easy to identify, however, databases with unfamiliar names were less likely to be clicked on. To remedy this, **Smith** created a narrow by subject box which allowed patrons to select a subject area, such as biology, and have their search results filtered to show databases that are best for that subject area. Librarians can control which databases show up using an administration tool. The reasoning was that students didn't need to dive into the unknown — topic-restricted searches worked better. **O'Connell** said these were both examples of a "reversal of the norm" but the testing proved it out.

In **Smith's** user testing, they could verify results quickly across multiple users, work agilely to make changes, and continue testing those revisions programmatically. For example, the first iteration of the bento box, had drop down menus allowing the user to add various boxes, such as material type, databases from a list, or third party platforms like **New York Times** or **Getty Images**. In this initial design the dropdowns were towards the top of the screen and the team observed that users did not notice or use them. So, they revised the page to put all that information in one spot and then revised the wording to encourage usage. Additional testing helped them explore the correct order in which to offer materials (e.g., books, articles, databases, local results and video).

In another example from the initial design, users were transferred to multiple additional interfaces when using the "Explore More" feature. The sudden change in the display was confusing to students and led to the creation of a slide out sidebar to load additional content. This new design tested well and kept students within the bento box display, reducing confusion and streamlining the research process.

The **Smith** team also tested the number of APIs that could be included in the bento box design. They tested API displays for **Wikipedia**, **New York Times**, **Getty Images**, and **Digital Public Library of American (DPLA)**. Many of these interfaces either tested poorly or the content was deemed inappropriate for the final product. While **DPLA** did not necessarily test well, the team viewed the results as potentially important for the research process, bringing primary-source content into the mix. In one usability test a student could locate images in **DPLA** on a challenging research topic. **O'Connell** said those results were great because "we want them to discover resources they never would have found."

An important part of the testing revolved around the language and terminology used in the display. **O'Connell** said, "The tricky part was getting the wording right so students click

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Wandering the Web — Backpacking, Hiking, Trekking, and Running on Trails in the United States

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As outdoor sports activities continue to grow in popularity, two areas that have seen some of the most growth in recent years are trail hiking and running. According to a 2017 study by *outdoorindustry.org*, "running, including jogging and trail running, was the most popular activity among Americans when measured by both number of participants and by number of total annual outings." Additionally, hiking has continued to remain one of the most popular outdoor sports in the United States. The following resources have been selected with beginner and intermediate hikers and trail runners in mind.

Hiking, Backpacking, Trekking.

https://americanhiking.org/gear-resources/tips-for-your-next-hike/ — *American Hiking* provides information on virtually every aspect of hiking, trekking, and camping. This page links to previously published *American Hiking Society* articles, fact sheets, and check lists which are well curated and organized into categories such as Outdoor Skills, Gear, and Safety & First Aid... etc. A must visit for those new to the outdoors, and equally beneficial for those with years of experience. The home page also provides information on advocacy, preservation, and volunteer options.

http://www.hikingbeginner.com/ — This site is dedicated entirely to new hikers. With sections on equipment, hiking etiquette, safety and first aid — as well as information on using a compass and gps, and exercises & techniques — it is an extensive go-to guide for beginner and intermediate hikers. The site also provides links to additional reading materials and resources on the subject.

http://www.backpacking.net/beginner.html — *The Beginner Backpacker* is an excellent resource for families and those with younger children. Provides a lot of practical and pragmatic advice with strong emphasis on safety and preparedness, including sections on "Hiking with Children" and "Common Sense" basics. Also includes a "Recommended Reading" list for further reading.

Trail Running

https://trailrunner.com/resources/ — The official website of the *American Trail Running Association*, this is a comprehensive site for trail runners of all levels of experience and skill. The site features sections with tips on how to get started in the sport, as well as information on how to help preserve and maintain trails. The website also maintains lists of running organizations and clubs, magazines and blogs (with links), and also provides a community event calendar where users can post race dates and signup links for events around the world ranging in distance from 1 kilometer to 100+ mile ultramarathons.

http://trailrunnermag.com/ — *Trail Runner Magazine* is a valuable source of both information and entertainment for trail running enthusiasts. The site regularly features training tips and plans, gear reviews, recipes, nutrition and hydration tips, as well as news about major trail races and feature articles on professional and amateur runners from around the globe.

https://www.rei.com/learn/expert-advice/trail-running-basics.html — Sponsored by *REI*, this site gives the basics for those new to trail running, including tips on choosing shoes that fit properly, first aid, and basic training guidelines. While no means exhaustive, this

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on an option because they understand what they will be getting." He went on to say that there were multiple sessions dedicated to testing this aspect of the design posing questions such as, *"does this make sense?"* or *"do you understand what is meant by Narrow by Subject?"*

The real analytical aspect of this research and redesign was not so much in the initial draft or redesign, but to see how search patterns and user behaviors develop or change over time and using that knowledge to inform decisions on what boxes should be on the screen in the future. For example, **Smith** is tracking how users are customizing the bento box feature that allows them to add or drop boxes from their displays. Testing shows that a significant number of students are adding a box for journals but not using the existing box for videos. Such trends might lead librarians to swap out videos for journals on the main search page in the future. The **Smith** team's goal is to understand and learn from user behavior and incorporate changes iteratively rather than force radical redesign changes all at once.

Finding patterns in the analytics of searching will allow librarians to apply those findings to the bento box. In the future, they can build and deploy customized bento boxes for search terms as they are utilized to help the user start in the direction they really want to move towards in their discovery process. **O'Connell** said all of these customized search options become possible and scalable at the institutional level because they can harvest data across their APIs, **Google Analytics** and other data points. The **Smith** team knows that it does not have to be at scale to start, just a few patterns emerging can lead to incremental changes and the further refinement of data collection. For example, they have plans to build a large database of how subjects are connected based on their search patterns and can track how those are added or removed from the bento box based on user behavior.

When asked what they would measure if they could, **O'Connell** said it would be helpful to track usage by undergraduates, graduate students and faculty to determine where they are starting their research and what are the successes and challenges for each group. He'd like to know how faculty are using the interface compared to students and whether graduate students are leveraging the bento box or going right into database searching. He also said that authentication data could be valuable to explore, but because privacy is paramount for **Smith College** most of these direct analytics about type of user and authentication are not possible. **Smith** has considerable success with what he called "guerrilla testing." By setting up a testing station in the student center or other spots on campus, librarians can capture students in various majors as well as students who log in rather than come to the library.

The goal is ultimately to build a dynamic search interface that will serve as both a starting point for initial research as well as support customized advanced research. At **Smith College**, analytics are not collected to help the organization prove their worth to the institution. While **O'Connell** concedes that many institutions need to collect data to prove their worth, **Smith College Libraries** are well supported by the institution allowing staff the flexibility to collect data to understand what they can do better and engage in an iterative development process based on observation that will continue to benefit students and the libraries.